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EXAMINER	
BIRKHIMER, CHRISTOPHER D	
ART UNIT	PAPER NUMBER
2186	

NOTIFICATION DATE	DELIVERY MODE
03/18/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/596,155	SO ET AL.	
	Examiner	Art Unit	
	CHRISTOPHER D. BIRKHIMER	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-7,9,14 and 15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-7,9,14 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The current Office Action is in response to the Amendment submitted 11/17/2009. The Examiner acknowledges the amendments to claims 1 and 6 along with the cancellation of claims 4, 8, and 10 – 13 with the addition of claims 14 – 15. Claims 1 – 3, 5 – 7, 9, and 14 – 15 are pending in the case.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.,* 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims **1 – 3, 5 – 7, 9, and 14 - 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art hereinafter known as AAPA in view of Wells et al. (Pat 5,535,369) in view of Stoppani, JR. (Pat 5,287,500) in view of Koizumi et al. (Pub. No.: US 2002/0103969 A1).

With regard to **claim 1**, AAPA teaches a method for recording data **[Specification, Page 1, Lines 15 – 19]** to a free area of a recording area **[Specification, Page 1, Lines 15 – 19, This shows a media for recording different kinds of data. It is implied that the area the data is recorded is free or else the data could not be recorded]** of an information recording medium **[Specification, Page 1, Lines 15 – 19 and 23 – 25]**, the information recording medium **[Specification, Page 1, Lines 15 – 19 and 23 – 25]** having the recording area for storing data which is managed by a file system **[Specification, Page 1, Line 33; Specification, Page 2, Line 2]**, wherein

the recording area of the information recording medium **[Specification, Page 1, Lines 15 – 19 and 23 – 25]** is managed in units of blocks **[Specification, Page 2, Lines 8 – 9]**, and each block includes at least two clusters as units for storing data for the file system **[Specification, Page 2, Lines 14 – 18, This shows the blocks memory is divided into a number of clusters that are between 1 - N where N is an integer. The limitation of two clusters is included in the range of 1 - N clusters since two is an integer]**.

However, AAPA does not specifically disclose the limitation of searching the blocks for a valid block, the valid block having at least a predetermined threshold number of unused clusters, determining the valid block from the searched blocks, and writing the data in the determined valid block prior to writing the data in the searched blocks having less then the predetermined threshold number of unused memory, acquiring information about the predetermined threshold number from the information

recording medium memory, the information acquired from the information recording medium indicating information for determining the predetermined threshold number of clusters necessary to write the data at least at a predetermined minimum speed.

Wells discloses the limitation of searching the blocks for a valid block, the valid block having at least a predetermined threshold of unused memory **[Column 15, Lines 48 – 60, This shows searching for a block with enough free]**, determining the valid block from the searched blocks, and writing the data in the determined valid block prior to writing the data in the searched blocks having less then the predetermined threshold number of unused memory **[Column 18, Lines 44 – 67; Column 19, Lines 1 – 22, This shows the process of storing data in a block that has enough memory before storing it in a block that does not have enough free memory]**.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to use the teachings of Wells in AAPA, because it increases data coherency **[Column 35, Lines 60 - 67; Column 36, Lines 1 - 4]**.

However, AAPA in view of Wells does not specifically disclose the limitation of a number of unused clusters and acquiring information about the predetermined threshold number from the information recording medium memory, the information acquired from the information recording medium indicating information for determining the predetermined threshold number of clusters necessary to write the data at least at a predetermined minimum speed.

Stoppani discloses a number of unused clusters **[Column 6, Lines 25 – 43]** and acquiring information about the predetermined threshold number from the information

recording medium memory **[Column 6, Lines 25 – 43, The information about the predetermined threshold number is the information that indicates the predetermined threshold number of unused clusters is free in the memory and this is acquired from the memory with the use of a count or flag that indicates how many unused clusters there is or that the predetermined threshold value of unused clusters is present]**.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to use the teachings of Stoppani in AAPA in view of Wells, because it ensures that sufficient available space is present on storage device to store additional files **[Column 6, Lines 44 – 47]** and it provides a method for Wells to perform the searching and determining of a valid block.

However, AAPA in view of Wells in view of Stoppani may no specifically disclose the limitation of the information acquired from the information recording medium indicating information for determining the predetermined threshold number of clusters necessary to write the data at least at a predetermined minimum speed

Koizumi discloses information acquired from the information recording medium indicating information for determining a predetermined threshold number of clusters necessary to write the data at least at a predetermined minimum speed **[804, 805, and 807, Fig 8; Page 1, Paragraph 0012, This shows that the data transfer speed is monitored and if the speed drops below a minimum speed data is migrated making room for the data so the data transfer speed can increase]**.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to use Koizumi in AAPA in view of Wells in view of Stoppani, because it allows the data storage devices to be optimized according to multiple criteria and allows loads to be equalized when there is a localized overload thereby providing a fixed level of performance for the data system even if there is increased traffic **[Page 7, Paragraph 0087]**.

With regard to **claim 2**, AAPA discloses storing data in clusters **[Specification, Page 2, Lines 1 – 13, This shows the memory of a block is divided into clusters]**.

Wells discloses data are written in unused memory in the valid block **[Column 18, Lines 44 – 67; Column 19, Lines 1 – 22, This shows the process of storing data in a block that is valid because it has enough free memory to store the desired data]**.

With regard to **claim 3**, AAPA discloses a storage medium divided into blocks where the memory of the blocks is divided into clusters **[Specification, Page 2, Lines 1 – 13]**.

Wells discloses determining a valid block **[Column 18, Lines 44 – 67; Column 19, Lines 1 – 22, This shows the process of storing data in a block that has enough memory before storing it in a block that does not have enough free memory]** and searching for a valid block **[Column 15, Lines 48 – 60, This shows searching for a block with enough free memory]**.

Stoppani discloses counting unused clusters **[Column 6, Lines 41 – 43]**, determining a valid block on the basis of the counting result **[Column 6, Lines 25 – 43,**

This shows each record contains count data and the record is used to find valid areas in memory], generating and holding a valid free area list **["free space table", Column 6, Lines 25 – 28]** which is list information related to the valid block, and searching for a valid block by referring to the valid free area list at data recording process **[Column 6, Lines 25 – 43, This shows searching the table to find a valid location based on clusters to store data]**.

With regard to **claim 5**, AAPA teaches a block of storage is divided into smaller clusters **[Specification, Page 2, Lines 1 - 13]**.

Wells discloses the predetermined threshold number is a value at least one-half of the amount of memory in each block **[Column 15, Lines 48 – 60; Column 18, Lines 44 – 67; Column 19, Lines 1 – 22, This shows the search and determination of free memory in a block is based on the amount of data that is to be written in the memory. At times the data to be written will be equal to the storage in at least one-half of the number of clusters in each block and at other times it will be less then one-half of the number of clusters in each block. There is no limitation that the predetermined number is always a value at least one-half of the number of clusters included in each block]**.

Stoppani discloses deciding memory space based on a number of unused clusters **[Column 6, Lines 25 – 43]**.

With regard to **claim 6**, AAPA teaches a data processing apparatus **[Specification, Pages 1 – 2, The Applicant discloses writing data to a memory device which implies there is an data processing apparatus]** for writing or reading

data **[Specification, Page 1, Lines 15 – 17]** to or from an information recording medium **[Specification, Page 1, Lines 15 – 19 and 23 – 25]**, wherein

a recording area of the information recording medium **[Specification, Page 1, Line 33; Specification, Page 2, Line 2]** is managed in units of blocks **[Specification, Page 2, Lines 8 – 9]**, each block **[Specification, Page 2, Lines 8 – 9]** includes at least two clusters **[Specification, Page 2, Lines 14 – 18, This shows the blocks memory is divided into a number of clusters that are between 1 - N where N is an integer. The limitation of two clusters is included in the range of 1 - N clusters since two is an integer]**, and the clusters are units for storing data for a file system **[Specification, Page 2, Lines 14 – 18]**;

the data processing apparatus **[Specification, Pages 1 – 2, The Applicant discloses writing data to a memory device which implies there is an apparatus to perform the writing]** comprises:

an I/O processor that processes input and output of information for the information recording medium **[Specification, Page 1, Lines 15 – 19 and 23 – 25, It is implied there is an I/O processor associated with the information recording medium in order to save to and read from the information recording medium]**;

a file system controller **[Specification, Page 2, Lines 1 – 7]** that manages data stored in the information recording medium **[Specification, Page 1, Lines 15 – 19 and 23 – 25]**, as a file;

a data processor that controls writing and reading of data to and from the information recording medium **[Specification, Page 1, Lines 15 – 19 and 23 – 25, It is**

implied there is a data processor associated with the information recording medium in order to save to and read from the information recording medium];

a valid free area manager that manages, by units of blocks, information for the blocks **[Specification, Page 2, Lines 1 – 13, This shows the access units of the file system are the same as blocks]**.

However, AAPA does not specifically disclose the limitation of a valid free area manager that manages information for the blocks containing at least a predetermined threshold number of unused clusters in an area of the information recording medium and when necessary to record data to a new free area, the data processor, as a control, searches for a valid block from the managed blocks with reference to the information held in the valid free area manager, and writes data to the searched valid block prior to writing data to another one of the managed blocks and acquiring information about the predetermined threshold number from the information recording medium memory, the information acquired from the information recording medium indicates information for determining the predetermined threshold number of clusters necessary to write the data at least at a predetermined minimum speed.

Wells discloses a when necessary to record data to a new free area, the data processor, as a control, searches for a valid block from the managed blocks and writes data to the searched valid block prior to writing data to another one of the managed blocks **[Column 18, Lines 44 – 67; Column 19, Lines 1 – 22, This shows when data is recorded to a free area the blocks in the memory are first searched and then the information about the searched blocks is analyzed to determine if there is a**

block to store the data. A valid block is a block with enough free memory to store the data. If one of the blocks is a valid block the data is written into the valid block. If none of the blocks are a valid block an erase operation is performed to empty a block and then the data is written into the previously invalid block].

It would have been obvious to someone of ordinary skill in the art at the time of the invention to use the teachings of Wells in AAPA, because it increases data coherency **[Column 35, Lines 60 - 67; Column 36, Lines 1 - 4]**.

However, AAPA in view of Wells does not specifically disclose the limitation of valid free area manager that manages information for the memory containing at least a predetermined threshold number of unused clusters and using the information in the valid free area manager when writing data to memory and acquiring information about the predetermined threshold number from the information recording medium memory, the information acquired from the information recording medium indicates information for determining the predetermined threshold number of clusters necessary to write the data at least at a predetermined minimum speed.

Stoppani discloses valid free area manager **["free space table", Column 6, Lines 25 – 28]** that manages information for the memory containing at least a predetermined threshold number of unused clusters **[Column 6, Lines 25 – 43]** and using the information in the valid free area manager **["free space table", Column 6, Lines 25 – 28]** when writing data to memory **[Column 6, Lines 44 – 47]** and acquiring information about the predetermined threshold number from the information recording medium memory **[Column 6, Lines 25 – 43, The information about the**

predetermined threshold number is the information that indicates the predetermined threshold number of unused clusters is free in the memory and this is acquired from the memory with the use of a count indicating how many unused clusters there is].

It would have been obvious to someone of ordinary skill in the art at the time of the invention to use the teachings of Stoppani in AAPA in view of Wells, because it ensures that sufficient available space is present on storage device to store additional files **[Column 6, Lines 44 – 47]** and it provides a method for Wells to perform the searching and determining of a valid block.

However, AAPA in view of Wells in view of Stoppani may no specifically disclose the limitation of the information acquired from the information recording medium indicates information for determining the predetermined threshold number of clusters necessary to write the data at least at a predetermined minimum speed

Koizumi discloses information acquired from the information recording medium indicates information for determining a predetermined threshold number of clusters necessary to write the data at least at a predetermined minimum speed **[804, 805, and 807, Fig 8; Page 1, Paragraph 0012, This shows that the data transfer speed is monitored and if the speed drops below a minimum speed data is migrated making room for the data so the data transfer speed can increase]**.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to use Koizumi in AAPA in view of Wells in view of Stoppani, because it allows the data storage devices to be optimized according to multiple criteria and allows

loads to be equalized when there is a localized overload thereby providing a fixed level of performance for the data system even if there is increased traffic **[Page 7, Paragraph 0087]**.

With regard to **claim 7**, AAPA teaches memory is divided into blocks and then subdivided into smaller clusters **[Specification, Page 2, Lines 14 – 18, This shows the blocks memory is divided into a number of clusters]**.

Stoppani discloses the valid free area manager **["free space table", Column 6, Lines 25 – 28]** holds a valid free list which is list information **[Column 6, Lines 25 - 31]** related to the valid block which is one of the blocks including at least the predetermined threshold number or unused clusters **[Column 6, Lines 25 – 43, This shows the linked list contains which clusters are free and which are not in the blocks of AAPA]**.

With regard to **claim 9**, AAPA teaches a block of storage is divided into smaller clusters **[Specification, Page 2, Lines 1 - 13]**.

Wells discloses the predetermined threshold number is a value at least one-half of the amount of memory in each block **[Column 15, Lines 48 – 60; Column 18, Lines 44 – 67; Column 19, Lines 1 – 22, This shows the search and determination of free memory in a block is based on the amount of data that is to be written in the memory. At times the data to be written will be equal to the storage in at least one-half of the number of clusters in each block and at other times it will be less then one-half of the number of clusters in each block. There is no limitation that**

the predetermined number is always a value at least one-half of the number of clusters included in each block].

Stoppani discloses deciding memory space based on a number of unused clusters **[Column 6, Lines 25 – 43]**.

With regard to **claim 14**, Koizumi discloses wherein the predetermined minimum speed is the speed necessary for real-time recording of the data **[804, 805, and 807, Fig 8; Page 1, Paragraph 0012, This shows that the data transfer speed is monitored to make sure it does not go below a threshold minimum speed and if it does it moves data around so the speed goes above the threshold. This shows the speed of recording is real time since the recording happens as the system is running in real-time]**.

With regard to **claim 15**, Koizumi discloses wherein the predetermined minimum speed is the speed necessary for real-time recording of the data **[804, 805, and 807, Fig 8; Page 1, Paragraph 0012, This shows that the data transfer speed is monitored to make sure it does not go below a threshold minimum speed and if it does it moves data around so the speed goes above the threshold. This shows the speed of recording is real time since the recording happens as the system is running in real-time]**.

Response to Amendment/Arguments

4. Applicant's arguments with respect to claims **1 and 6** have been considered but are moot in view of the new ground(s) of rejection.

The amendments to the claims have changed the scope of the claims requiring further search and consideration resulting in the new grounds of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Examiner's Note

6. With regard to claims 14 and 15 there is support in the specification for the term "real-time". However, it is unclear from the claim if this real-time language is meant to mean the time it takes to record the movie content from one location to another or the time it takes to record the movie content while the movie is being played. In general

terms when data is stored in a memory device it is recorded in real-time since time is a constant that is always running and recording data requires a certain amount of time to occurring making the recording time real-time since it takes time to record data. The Examiner suggests the Applicant to possibly bring in support from the specification, if there is support, to further define what the real-time limitation is.

Direction of Future Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER D. BIRKHIMER whose telephone number is (571)270-1178. The examiner can normally be reached on M-H 7:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher D Birkhimer
Examiner
Art Unit 2186

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